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Home vs. Workplace Energy Saving Attitudes and Behaviors: The Moderating Role of Satisfaction with Current Environmental Behaviors, Gender, Age, and Job Duration.

Abstract

This paper responds to the corporate social responsibility (CSR) literature's calls for further research at the micro level by studying both general and workplace specific energy saving attitudes and behaviors, and most importantly, their associations. It also explores differences between employees with different levels of perceived satisfaction with current environmental behavior, age, gender, and job duration. Using a survey methodology and multigroup structural equation modeling analyses, this study explores real data from a UK university's employees, before delivering an energy saving intervention. The results illustrate that the relationship between home and workplace energy saving attitudes and behaviors is not always positive and significant, but rather varies by perceived level of satisfaction with current environmental behavior among employees, and gender groups, rather than assuming generic spillover effects as discussed in prior literature. These results offer valuable insights and future research directions on the differences between home and workplace energy saving attitudes and behaviors, which is a timely CSR topic with both financial and image/reputation implications for organizations. Managerial implications for energy saving interventions are also discussed.

Keywords: corporate social responsibility (CSR); employees; energy saving attitudes; workplace energy saving behaviors; home energy saving behaviors.

Track: Social Responsibility, Sustainability, and Public Policy

The growing body of research in CSR has concentrated on institutional (laws and standards etc.) and organizational (macro research on boards and top management groups using theories from strategy) aspects, while very little research has focused on individuals and micro issues, such as employees' green behaviors (Manika et al. 2013). Energy saving behavior, as a type of green behavior, is extremely important for a reduction in levels of carbon produced by organizations, with Pérez-Lombard, Ortiz, and Pout (2008) noting that energy consumption from buildings is an increasing concern, fuelled by growth in the population, an increase in demand for buildings and comfort levels, and the rise in time spent inside buildings. Office buildings within the commercial and retail sectors account for 17% of U.K. energy consumption and 2% of total energy use. In offices, 55% of energy consumption is through heating, ventilation, and air-conditioning, 17% is from lighting, and the remainder is from equipment, food preparation, and refrigeration. Thus, encouraging energy saving behaviors among employees has become an important concern for organizations.

While individual factors which affect employees' environmental behavior have been examined the evidence for each factor has been largely inconclusive, and have often been explored in isolation with no attempt to explore how they affect one another and, in turn, the behavior of individuals within organizations (Lo, Peters and Kok 2012a). It is vital to understand these associations as an increasing number of organizations are seeking to improve the pro-environmental behavior of their employees.

Studies of employee environmental behavior generally compare directly with household environmental behavior, largely because there is a generally assumed spillover effect between home and the workplace and vice versa. Past research suggests, for example, that if individuals recycle at home they are much more likely to recycle at the workplace (Lee, De Young, and Marans 1995; McDonald 2011; Tudor, Barr, and Gilg 2008) even if at a lower level. In addition, Marans and Lee (1993), Tudor, Barr, and Gilg (2008) and the

review by Lo, Peters and Kok (2012b) found that environmental management practices in the home strongly correlated with sustainable waste management behavior at work. However numerous differences exist regarding the motivation for employees' environmental behavior (Andersson, Shivarajan, and Blau 2005) and a spillover effect should not be assumed in all areas of environmental behavior. In general, employees do not have the same financial interest in the workplace as they do at home, are not typically concerned with their energy usage, and have little context for how much energy they use because devices are often shared by multiple employees (Carrico and Riemer 2011; Siero et al. 1996). Nonetheless, Carrico and Riemer (2011) argue that employees are a captive audience and thus can be targeted through low-costs means, such as e-mails and e-newsletters.

Thus, this paper contributes directly to the limited literature and calls for future research in the area of employees' individual micro level CSR. Firstly, it makes a valuable theoretical contribution by examining both general and workplace specific attitudes and behaviors, and most importantly, their associations. Secondly, it also explores differences between employees with different levels of perceived satisfaction with current behavior, age groups, gender groups, as well as job duration levels.

Literature Review and Hypotheses

The paper focuses on a number of key variables, and the relationships between them, and is outlined in turn below.

Attitudes

Attitudes are often proposed as key individual antecedent of employee level CSR (Chun et al., 2013) and are often used to predict employee environmental behavior. Some studies have found that attitudes are a key predictor of environmental behaviors (e.g.

Robertson and Barling 2013), while others have not found this to be true (e.g. Andersson, Shivarajan, and Blau 2005). Further studies have found that attitudes have a moderate correlation with behavioral intention and a weaker relationship to behavior (Lo, Peters and Kok 2012b). Some authors suggest that inconclusive results are due to the need for attitudes and behaviors to be measured at the same level of specificity. Therefore, attitudes specifically towards the behavior at hand (i.e. attitude towards the act) have been found at times to be more predictive of both behavior and behavioral intentions, than general attitudes (Vining and Ebreo 2002). Within the literature both general attitudes (to all aspects of the environment) and specific attitudes (for example, attitudes towards energy saving, recycling etc.) have been tested (e.g. Gregory-Smith et al., in press). It is generally assumed that specific attitudes will predict specific behaviors more accurately than general attitudes because they would be at the same level of specificity (Vining and Ebreo 2002).

Energy Saving Behavior

Vining and Ebreo (2002) and Steg and Vlek (2009) highlight the multiple behavioral focuses and measurements that have been utilized in general environmental research and in employee environmental behavior research. In the latter case, both actual (waste bin analysis: Tudor, Barr, and Gilg 2008, gas and electricity data: Shippee and Gregory 1982) and self-reported (McDonald 2011; Scherbaum, Popovich, and Finlinson 2008; Smith and O'Sullivan 2012) behavior measures have been utilized.

The literature has focused on a range of behaviors with waste management/recycling being the most popular (Marans and Lee 1993; McDonald 2011; Tudor, Barr, and Gilg 2008), but studies have also researched climate control, lights, (Lo, Peters and Kok 2012a; 2012b), driving behavior (Siero et al. 1989), computers, lights and fan usage (Scherbaum, Popovich, and Finlinson 2008) and energy use (Carrico and Riemer 2011) amongst others. However, caution should be exercised in assuming that the antecedents and concomitants of any

particular behavior are the same or even similar (Steg and Vlek, 2009; Tracy and Oskamp 1983-1984; Vining and Ebreo 2002) as factor analyses highlighted that recycling is not strongly related to energy, water conservation (Berger 1997); and household purchasing behavior (Ebreo and Vining 1994; Linn, Vining, and Feeley 1994), for example. Research suggests that generalization between behaviors might be the case only when the behaviors are closely related (Reams, Geaghan, and Gendron 1996) and that the performance of one pro-environmental behavior might actually inhibit or reduce the performance of others (Thorgersen 1999).

Perceived Satisfaction with Environmental Behavior

Perceived satisfaction with environmental behavior has been studied very little in the employee environmental literature. However, satisfaction with behavior is important because it is likely that employees, who are satisfied with the level/type of their environmental behavior, will not change their behavior, while those who are not satisfied may be inclined to do more. Satisfaction is also likely to give some indication of employees' state of readiness and receptivity with regards to environmental campaigns. Gregory-Smith et al. (in press) found that employees' satisfaction with the level of impact on the environment are negatively correlated with general environmentally friendly attitudes; noting that those employees who have stronger environmental attitudes consider that they have a stronger negative impact on the environment and thus, are less satisfied with their level of impact on the environment. Also, research suggests that if employees have strong pro-environmental attitudes they will report higher environmental behaviors (Manika et al. 2014).

Demographic Characteristics and Environmental Behavior

Although popular in attempted profiling and segmentation of environmental consumers and behaviors (Berger, 1997) research has generally proven inconsistent in the determining the effect of demographic variables on environmental behavior and attitudes,

with little consensus in the extant literature (Peattie, 2010). Diamantopoulos et al. (2003) conclude that females are more likely to hold strong attitudes towards environmental quality and to undertake recycling activities more, and suggesting there is only partial evidence to support the view that old and young people are different in their environmental behavior.

In the workplace, Wehrmeyer and McNeil (2000) explored gender differences in environmental attitudes and discovered four factors of attitudes toward/beliefs about ecological issues: Conscientious Activism, Corporate Environmentalism, Deep Green and Technological Omnipotence. They found that female respondents scored highly on Conscientious Activism and Deep Green (although mostly for older females) and are more likely to participate in environmentally positive behavior. The attitudes also differed by age, job role and level in the organizational hierarchy.

Thus, the following hypotheses were advanced:

H1: General energy saving attitudes will have positive and significant relationship with workplace energy saving attitudes.

H2: General energy saving attitudes will have positive and significant relationship with home energy saving behaviors.

H3: General energy saving attitudes will have positive and significant relationship with workplace energy saving behaviors.

H4: Workplace energy saving attitudes will have positive and significant relationship with workplace energy saving behaviors.

H5: Home energy saving behaviors will have positive and significant relationship with workplace energy saving behaviors.

H6: a) Perceived Satisfaction with current environmental behavior; b) Gender; c) Age; and d) Job duration will moderate the aforementioned relationships.

Methodology

Quantitative data were drawn from a questionnaire administrated to the employees of a UK university in 2013, by the environmental charity Global Action Plan (GAP) to evaluate energy saving behaviors among the university's employees, before the administration of an energy saving intervention. Attitudinal and behavioral variables, as well as perceptions of satisfaction with employee's own environmental behavior, were assessed via an anonymous questionnaire to encourage participation, reduce social desirability bias, and comply with appropriate ethical research conduct.

120 fully completed questionnaires were collected. The questionnaire consisted of 16 items (see Table 1). Likert scales were used to measure general energy saving attitudes, workplace energy saving attitudes, home and workplace energy saving behaviors, on a scale of 1 to 7 (1=Strongly Disagree, 5=Strongly Agree). Perceived satisfaction with current environmental behavior was measured via multiple-choice questions with 3 options as response items (i.e. "I would like to do a lot more to help the environment"; "I would like to do a bit more to help the environment", "I am happy with what I do at the moment"). The questionnaire also asked participants to state their gender, their age, and their job duration.

Insert Table 1 about here

It must be mentioned that the questionnaire was not originally designed for the purpose of testing the aforementioned hypotheses and thus validated and reliable academic scales were not used to measure the constructs. Therefore, this study should be treated as exploratory. Nevertheless, the use of real data reduces lack of realism, artificiality, and the lack of generalizability, which are associated with laboratory/student sample studies (see Peterson and Merunka 2013).

However, exploratory factor analysis and Cronbach's Alphas were computed, and results suggested that each multi-item scale used was both reliable and valid (see Table 1). Given that the measurements were designed by the charity, one variable was measured using a single-item. Even though multi-item scales are seen as superior, single-item scales can be adequate alternatives if designed and used appropriately (Fuchs and Diamantopoulos 2009). There was adequate variable-to-sample ratio, and no signs of extreme multicollinearity were found based on the VIF and tolerance levels for each construct (Hair et al. 1998).

Almost 56% of the sample has an age of 41 to 60 years old, followed by about 37% of the individuals whose age was between 18 and 40 years old; and with only 7% of the participants with an age above 61 years old. More than half of the participants (63.3%) were females. In addition, most participants (70%) had worked at the university for 5 or more years, while 22% of the participants have been employed between 1-4 years, and the rest of the sample for less than one year.

Results

First, descriptive statistics and correlations were computed for all variables (by first calculating their composite scores) (see in Table 2). None of the inter-correlations among the constructs were greater than 0.85 signifying discriminant validity (c.f. Dijkstra et al. 1998). As expected, all correlations were positive and significant, with the highest occurring between general and workplace energy saving attitudes, and the lowest between general energy saving attitudes and workplace energy saving behaviors.

Insert Table 2 about here

To examine the hypotheses of the proposed theoretical model we used a conservative statistical approach (using observed variables rather than their latent versions) in combination with a structural equation modeling (SEM) technique (rather than a simpler analysis technique; e.g., regressions which does not take into account time-order effects). The structural equation model, tested using MPlus 7 software, revealed a very good model fit ($\chi^2 = .03$, $df = 1$, $p = .87$; RMSEA = .00, 90% C.I.=.00-.13; CFI = 1.00; TLI = 1.00; SRMR = .00). The model accounted for 28.4% of the variance in home energy saving behaviors and 28.4% of the variance in workplace energy saving behaviors. As shown in Table 3, all the relationships were positive and significant, except the relationships between workplace energy saving attitudes and behaviors, general energy saving attitudes and workplace energy saving behaviors. These were not significant, indicating that attitudes, whether general or workplace specific might not predict workplace energy saving behaviors of employees.

Insert Table 3 about here

These results are not surprising given the stream of literature that acknowledges the attitude-behavior gap in the area of environmental and ethical consumption (e.g. Kollmuss and Agyeman 2002; Gregory-Smith, Smith and Winklhofer 2013) or in the corporate responsibility literature (Boulstridge and Carrigan 2000). However, these do not allow a direct comparison with the workplace context. Thus an assessment against findings in the same context must be carried out. Recent studies that examined various employee environmental behaviors showed mixed results in terms of the relationship between attitudes and self-reported workplace behavior. For example, Manika et al. (2013) showed that general environmentally friendly attitudes are significantly correlated to behaviors such as energy saving, recycling and printing reduction; while Gregory-Smith et al.'s (in press) study showed that while general environmental attitudes do not predict heating/cooling behavior

(which is a type of energy saving), attitudes toward reducing heating at the workplace significantly predict heating/cooling behavior among employees. As per the results discussed above, H1, H2 and H5 were supported.

After checking this baseline SEM model (Table 3), a series of multigroup SEM analyses were conducted to examine differences in this model between employees with different levels of satisfaction with their current environmental behavior, gender, age, and job duration. To examine these moderators (H6), two multigroup SEM analyses were conducted for each moderator: 1) a model where parameters (i.e. path coefficients) between the independent and dependent variables were allowed to vary by level of moderator; and 2) a model where these parameters were constrained to be equal. A chi-square difference test was then employed to test whether or not there were significant differences between these two models for each moderator. These results should be generalized with caution given the unbalanced sample sizes between groups (some groups did not have an adequate variable-to-sample ratio but are used in this analysis as exploratory). However, the authors believe this analysis might contribute to the explanation of significant differences identified, and thus lead to valuable recommendations for future research. To the authors' knowledge this is the first study that employs this type of analysis in the area of employees' environmental behavior.

Differences among various levels of perceived satisfaction with current behavior

The two multigroup SEM models (fully constraint vs free parameters/unconstraint model) across levels of perceived satisfaction with current behavior indicated significant differences between them ($\Delta\chi^2=20.49-2.01=18.47$, $df=13-3=10$, $p<.05$). The free parameters model indicated a better model fit ($\chi^2=.2.01$, $df = 3$, $p = .57$; RMSEA = .00, 90%; C.I.=.00-.22; CFI = 1.00; TLI = 1.00; SRMR = .03) than the constrained model, supporting the existence of differences for H1-H5 based on the moderating role of perceived satisfaction with current environmental behavior. This means that the model, which allows for perceived

satisfaction levels to vary is a better model than the one assuming that relationships H1-H5 are consistent across different levels of perceived satisfaction.

The group with the satisfaction level “I would like to do a lot more to help the environment”, included 13 participants and had a non-significant R^2 for workplace energy saving behaviors. Therefore, the results indicate that the hypothesized model might not predict workplace energy saving behaviors for those employees who feel that they would like to do a lot more to help the environment. However, this small group did not have an adequate variable-to-sample ratio, which might be responsible for lack of significant results. The “I am happy with what I do at the moment” group with 36 participants had a chi-square value of 0.85, predicted 21.7% of the variance in home energy saving behaviors and 33.3% of the variance in workplace energy saving behaviors. Like with the previous group, this did not have an adequate variable-to-sample ratio. Lastly, the “I would like to do a bit more to help the environment” group with 71 participants and a chi-square value of 1.17, predicted 35.2% of the variance in home energy saving behaviors and 41.0% of the variance in workplace energy saving behaviors. This group was the only one that had an adequate variable-to-sample ratio and, therefore it can be concluded that H1, H2, H3, and H5 are supported for this particular group. The first two hypotheses (H1 and H2) and H5 were also supported in the baseline model (which did not include any moderating effects), but H3 was not.

All multigroup SEM results can be seen in Table 4, which indicates that significant differences may exist between levels of perceived satisfaction with current behavior. Thus H6a could be supported, although in order to generalize this result, balanced group sizes are needed.

Insert Table 4 about here

Gender Differences

Using a similar procedure as described above for perceived satisfaction as a moderator, the two multigroup SEM models (fully constraint and free parameters models) across genders indicated significant differences between them ($\Delta\chi^2=15.33-2.65=12.68$, $df=7-2=5$, $p<.05$). The free parameters model had a better model fit ($\chi^2=2.65$, $df=2$, $p=.26$; RMSEA = .07, 90% C.I. =.00-.27; CFI = .99; TLI =.98; SRMR = .02) than the fully constrained model, implying that significant differences exist between female and male employees for H1 to H5. The female group had 76 participants (adequate variable-to-sample ratio) and a chi-square value of .58, and predicted 25.4% of the variance in home energy saving and 29.7% in workplace energy saving behaviors. The male group had 44 participants (but with inadequate variable-to-sample ratio) and a chi-square value of 2.07, and predicted 35.9% of the variance in home energy saving and 28.3% in workplace energy saving behaviors. The results included in Table 5, indicate that the significant differences may exist between genders for H1-H5, thus supporting H6b. However, the results for the male group cannot be generalized given the variable-to-sample ratio.

Insert Table 5 about here

Age and Job Duration Group Differences

The free parameters multigroup SEM model which examined age as a moderator (H6c) did not indicate an acceptable model fit ($\chi^2=10.16$, $df=3$, $p=.01$; RMSEA = .24, 90% C.I. = .09-.41; CFI = .96; TLI =.81; SRMR = .29). Thus, relationships in H1-H5 could not be further evaluated across age groups. The two multigroup SEM models (the fully constraint and free parameters models) across job duration groups indicated non-significant differences between them ($\Delta\chi^2=22.90-5.37=17.53$, $df=13-3=10$, $p>.05$), implying that significant differences do not exist between groups of employees with different job duration

levels. Thus, H6d was not supported. However, these results should be carefully interpreted given the inadequate variable-to-sample ratios for some groups.

Managerial Implications, Limitations and Future Research

This study used real data from university employees (of both genders, various age groups and with different job duration levels) to examine how general and specific attitudes influence home and workplace energy saving behaviors. The methodology of this paper, included a series of multigroup SEM analyses to test for the moderating effects of age, gender, job duration and perceived satisfaction with current environmental behavior). This approach highlighted interesting findings plus new research directions, detailed below.

Results of the baseline model, which did not include the hypothesized moderators, indicate general energy saving attitudes predict only work energy saving attitudes but not workplace energy saving behavior. However, general energy saving attitudes predicted home energy saving behaviors. This is consistent with past research that generic attitudes might not be a good predictor of workplace behavior due to employees' lack of financial interest in saving energy and reduced control over devices or outcomes as they are shared with other employees (Carrico and Riemer 2011; Siero et al. 1996). Specific behavior attitudes are considered to be more predictive of behavior (Vining and Ebreo 2002), which is consistent with what the current research has found out; that general energy saving attitudes were positively associated with energy saving behaviors at home.

Energy saving behavior at home was found to be positively and significantly related to energy saving behavior at work. This was a moderately strong relationship, which adds to the limited prior literature on spillover effects between home and work behavior by extending it from recycling/waste management behavior (Marans and Lee 1993) to energy saving.

However, interestingly, the multigroup SEM analyses conducted, which tested the moderating effects of perceived satisfaction with current environmental behavior, showed that, for individuals who are satisfied/happy with what they currently do, this relationship between home and work behavior is not significant. Given this and the inconclusive results for the “less satisfied” groups, future research must research the strength of this relationship for the employees with lower levels of satisfaction. Identifying the employees who are more pro-energy saving at home, but perhaps feel that they need to do more in motivating themselves and others, would be valuable as they could potentially serve as eco champions, and encourage energy behavior change at the workplace through incentives and awards.

This study also indicated how the hypothesized relationships regarding the influence of attitudes on behaviors, at home and at the workplace may differ based on employees’ levels of perceived satisfaction with current environmental behavior, and gender. This has implications, particularly, for the design of social marketing intervention in the workplace, which will require firstly an assessment of the employees’ satisfaction levels with their environmental behavior, as well as maybe the creation of more than on-size-fits all intervention. This would then lead to more tailored campaigns that would better tap into employees’ specific and general attitudes, as well as home behavior.

Even though this study makes valuable contributions to the literature through the use of real field data, the results presented here should be seen as exploratory given the used questionnaire design, measurements and the use of unbalanced sample for multigroup analyses. Future research should explore the hypothesized model further, as well as take into account organizational variables that might affect energy saving behaviors at the workplace such as organizational culture (Deshpandé, Farley and Webster 1993) and person-organization fit variables (Ambrose et al. 2008) amongst others. These additions would advance the much needed literature in this area. In addition, future research should measure

actual rather than self-reported behavior given criticism in the literature regarding the attitude-behavior and intention-behavior gap (Kollmuss and Agyeman 2002), and issues such as social desirability bias (Fisher and Katz 2000) or common source/rater bias.

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Tables

Table 1: Multi-item measures and Cronbach’s alphas

<i>Variable/Construct</i>	<i>Scale Items</i>	<i>EFA Loadings</i>	<i>Cronbach’s Alpha</i>
General Energy Saving Attitudes	Conserving energy and natural resources is important to me.	.90	a=.89
	I have a responsibility to conserve energy and resources.	.90	
Workplace Energy Saving Attitudes	I should help the University conserve energy.	.85	a=.88
	The University should conserve energy.	.85	
Workplace Energy Saving Behavior	I switch off lights when not needed.	.89	a=.72
	I close windows rather than turning up heating when it’s cold.	.89	
Home Energy Saving Behavior	I actively try to reduce my electricity consumption at home.	.84	a=.85
	I switch off lights when not needed at home.	.73	
	I add or remove clothing rather than turning heating or a/c up at home.	.82	
	I open or close windows rather than turning heating or a/c up at home.	.71	
	I turn heating or air conditioning down if I can find other ways to be comfortable at home.	.87	

Table 2: Descriptive statistics and correlations

Variable Name	M (SD)	Min-Max	N	Correlations			
General Energy Saving Attitudes	6.47 (.71)	3-7	120	1			
Workplace Energy Saving Attitudes	6.53 (.60)	3-7	120	.85**	1		
Home Energy Saving Behavior	6.15 (.80)	3.2-7	120	.53**	.46**	1	
Workplace Energy Saving Behavior	6.04 (.80)	3-7	120	.33**	.34**	.52**	1

** $p \leq .01$ **Table 3: Structural equation model results of baseline model**

Baseline Model Relationships	Std. Loadings	S.E.	z-scores	Hypothesis Supported?
H1: General Energy Saving Attitudes → Workplace Energy Saving Attitudes	.84**	.03	32.41	Yes
H2: General Energy Saving Attitudes → Home Energy Saving Behaviors	.53**	.06	8.16	Yes
H3: General Energy Saving Attitudes → Workplace Energy Saving Behaviors	-.11	.15	-.78	No
H4: Workplace Energy Saving Attitudes → Workplace Energy Saving Behaviors	.23	.14	1.57	No
H5: Home Energy Saving Behaviors → Workplace Energy Saving Behaviors	.48**	.08	5.67	Yes

** $p \leq .01$ **Table 4: Multigroup structural equation model results: Examining differences between levels of perceived satisfaction with current behavior**

"I would like to do a lot more to help the environment" group ^a	Std. Loadings	S.E.	z-scores	Hypothesis Supported ?
H1: General Energy Saving Attitudes → Workplace Energy Saving Attitudes	.68**	.15	4.51	Yes
H2: General Energy Saving Attitudes → Home Energy Saving Behaviors	.25	.26	.98	No
H3: General Energy Saving Attitudes → Workplace Energy Saving Behaviors	-.08	.32	-.27	No
H4: Workplace Energy Saving Attitudes → Workplace Energy Saving Behaviors	.20	.31	.65	No
H5: Home Energy Saving Behaviors → Workplace Energy Saving Behaviors	.53**	.20	2.60	Yes
"I would like to do a bit more to help the environment" group ^b				
H1: General Energy Saving Attitudes → Workplace Energy Saving Attitudes	.73**	.05	13.41	Yes
H2: General Energy Saving Attitudes → Home Energy Saving Behaviors	.47**	.09	5.01	Yes
H3: General Energy Saving Attitudes → Workplace Energy Saving Behaviors	-.33*	.15	-2.26	No
H4: Workplace Energy Saving Attitudes → Workplace Energy Saving Behaviors	.34*	.14	2.40	Yes
H5: Home Energy Saving Behaviors → Workplace Energy Saving Behaviors	.56**	.10	5.71	Yes
"I am happy with what I do at the moment" group ^c				
H1: General Energy Saving Attitudes → Workplace Energy Saving Attitudes	.91**	.03	31.20	Yes
H2: General Energy Saving Attitudes → Home Energy Saving Behaviors	.59**	.11	5.49	Yes
H3: General Energy Saving Attitudes → Workplace Energy Saving Behaviors	.85**	.32	2.65	Yes
H4: Workplace Energy Saving Attitudes → Workplace Energy Saving Behaviors	-.43	.31	-1.39	No
H5: Home Energy Saving Behaviors → Workplace Energy Saving Behaviors	.22	.16	1.35	No

** $p \leq .01$; * $p \leq .05$ ^a NON-significant R^2 and inadequate variable-to-sample ratio ^b Inadequate variable-to-sample ratio ^c Significant R^2 and adequate variable-to-sample ratio**Table 5: Multigroup structural equation model results: Examining differences between genders**

Female group ^a	Std. Loadings	S.E.	z-scores	Hypothesis Supported ?
H1: General Energy Saving Attitudes → Workplace Energy Saving Attitudes	.79**	.04	17.88	Yes
H2: General Energy Saving Attitudes → Home Energy Saving Behaviors	.50**	.86	5.88	Yes
H3: General Energy Saving Attitudes → Workplace Energy Saving Behaviors	-.20	.16	-1.26	No
H4: Workplace Energy Saving Attitudes → Workplace Energy Saving Behaviors	.27	.15	1.77	No
H5: Home Energy Saving Behaviors → Workplace Energy Saving Behaviors	.51**	.10	5.05	Yes
Male group ^b				
H1: General Energy Saving Attitudes → Workplace Energy Saving Attitudes	.92**	.02	39.73	Yes
H2: General Energy Saving Attitudes → Home Energy Saving Behaviors	.60**	.09	6.20	Yes
H3: General Energy Saving Attitudes → Workplace Energy Saving Behaviors	.17	.36	.46	No
H4: Workplace Energy Saving Attitudes → Workplace Energy Saving Behaviors	.01	.33	.02	No
H5: Home Energy Saving Behaviors → Workplace Energy Saving Behaviors	.41**	.15	2.09	Yes

** $p \leq .01$; * $p \leq .05$ ^a Adequate variable-to-sample ratio; ^b Inadequate variable-to-sample ratio